

In the Claims

1. (Original) A method for measuring product shipment process capability, comprising:

maintaining a database that contains fields indicating at least an order, a max ship date, a customer requested date, and a product category for each order;

fetching order information for all orders that have a valid max ship date;

subtracting the customer requested date from the max ship date producing a difference value;

adding a predetermined number of days to the difference value providing a shipment quality metric for each order; and

determining a statistical calculation to indicate process quality using the shipment quality metric.

2. (Original) The method of claim 1 wherein the order information fetched from the database is only for those orders that were placed within a given time period.

3. (Previously Presented) The method of claim 1 further comprising:
determining a value for an upper specification limit and a lower specification limit;

displaying a percentage of times the shipment quality metric was greater than the upper specification limit; and

displaying a percentage of times the shipment quality metric was less than the lower specification limit.

4. (Original) The method of claim 1 further comprising:
setting a value for at least one specification limit; and
computing and displaying a statistical score based upon the specification limit and the shipment quality metrics, wherein said statistical score is a measure of process capability.

5. (Original) The method of claim 1 wherein the steps following maintaining the database are repeated at regular time intervals.

6. (Original) The method of claim 1 wherein the statistical calculation is calculated and displayed for each product category.

7. (Original) The method of claim 4 wherein the statistical score is calculated by using a formula given by:

$$Z_{LT} = \min\left[\frac{USL - \mu}{\sigma}, \frac{\mu - LSL}{\sigma}\right].$$

8. (Original) The method of claim 7 wherein the method further comprises determining Z short-term by use of the formula $Z_{ST} = Z_{LT} + 1.5$.

9. (Original) The method of claim 7 wherein the method further comprises displaying said Z_{LT} value by displaying a scale representing a range of values for Z_{LT} with an overlapping needle to indicate current performance.

10. (Original) The method of claim 8 wherein the method further comprises graphically displaying the Z_{ST} value by displaying a range of values with an overlapping needle to indicate current performance.

11. (Original) A computer-readable medium having stored thereon one or more computer programs having a set of instructions that, when executed by one or more computers, causes the one or more computers to:

query a database that contains information detailing orders, a requested delivery date, a max ship date, and a product category for a plurality of products;

ignore orders with no max ship date;

subtract the requested delivery date from the max ship date and add an adjustment value to obtain a shipment quality metric;

repeat the query, subtraction, addition acts for a plurality of shipped products;

and

process the shipment quality metrics to determine overall shipment quality.

12. (Original) The computer-readable medium of claim 11 wherein the shipment quality metrics are processed to provide a statistical measure of process capability.

13. (Original) The computer-readable medium of claim 11 wherein the shipment quality metrics are regularly re-processed by repeating the acts of claim 11 at regular time intervals.

14. (Original) The computer-readable medium as in claim 13 wherein the regular time interval is substantially real-time as perceived by a user.

15. (Original) The computer-readable medium of claim 11 wherein processing the shipment quality metrics is accomplished by a set of instructions that, when executed by one or more computers, causes the one or more computers to further:

determine a mean of the shipment quality metrics;

determine a standard deviation of the shipment quality metrics;

designate an upper specification limit (USL) and a lower specification limit (LSL) for the shipment quality metrics;

determine a Z long-term value by subtracting the mean from the upper specification limit and dividing the result by the standard deviation; and

display the value of Z long-term.

16. (Original) The computer-readable medium of claim 15 having further instructions to determine an estimated value for Z Short Term by adding a constant to the Z long-term value.

17. (Original) A computer data signal representing a sequence of instructions that, when executed by one of more processors, cause the one or more processors to:

maintain a database of data indicating an order number, a promise date, a request date, a max ship date, and a product category for each product;

obtain the data from each order that has a valid max ship date;

create an upper specification limit by adding a predetermined number of days just prior to a customer's requested delivery date;

create a lower specification limit by adding a predetermined number of days after a customer's requested delivery date; and

compute and display a statistical value providing an indication of process capability.

18. (Original) The computer data signal of claim 17 wherein the computer data signal contains further instructions to repeat the instructions of claim 17 at regular time intervals.

19. (Original) The computer data signal of claim 17 wherein the information is updated and the statistical value is recalculated every time a user requests the information.

20. (Original) The computer data signal of claim 17 having instructions to:
determine a mean value and a standard deviation;
subtract the mean value from the upper specification limit and divide a result by the standard deviation to create a first Z-value;
subtract the lower specification limit from the mean value and divide a result by the standard deviation to create a second Z-value; and
choose a value that is a minimum of the first and second Z-values.

21. (Original) The computer data signal of claim 17 wherein the statistical value calculated and displayed is a projected defect in parts per million.

22. (Original) The computer data signal of claim 17 wherein the statistical value calculated and displayed is a Z long-term value.

23. (Original) The computer data signal of claim 17 wherein the statistical value calculated and displayed is a Z short-term value.

24. (Previously Presented) The computer data signal of claim 17 having instructions to:

determine a number of times that an actual shipment date was between the upper specification limit and the lower specification limit given a number of opportunities;
project a number of times that a shipment date would not be between the upper specification limit and the lower specification limit given one million opportunities; and
display the projected number as defects per one million opportunities.

25. (Original) The computer data signal of claim 20 wherein the instructions cause the one or more processors to further:

decide which of the first and second Z-values are a minimum value; and
display the minimum value first and second Z-values identified as Z long-term.

26. (Original) The computer data signal of claim 25 wherein the instructions cause the one or more processors to further:

add 1.5 to the minimum value and display it as Z short-term.

27. (Previously Presented) A computer readable storage medium having a computer program stored thereon which, when executed by a processor, causes the processor to:

acquire a requested delivery date and a shipped date of a number of customer orders from a database;

calculate a shipment metric mean value and standard deviation from the dates;

establish an upper specification limit and a lower specification limit;

calculate a first Z value by subtracting the mean value from the upper specification limit and dividing by the standard deviation;

calculate a second Z value by subtracting the lower specification limit from the mean value and dividing by the standard deviation; and

determine a long term process capability value by selecting a minimum of the first Z value and the second Z value.